Docket No. 12-0321
ICC Staff Exhibit 5.0

DIRECT TESTIMONY

of

GREG ROCKROHR

Energy Engineering Program

Safety and Reliability Division

Illinois Commerce Commission

Commonwealth Edison Company
Annual Formula Rate Update and Revenue Requirement Reconciliation Authorized by Section 16-108.5 of the Public Utilities Act.

Docket No. 12-0321

July 17, 2012

Q. Please state your name and business address.

A. My name is Greg Rockrohr. My business address is 527 East Capitol Avenue, Springfield, Illinois 62701.

Q. By whom are you employed and in what capacity?

A. I am employed by the Illinois Commerce Commission ("Commission") as a Senior Electrical Engineer in the Safety and Reliability Division. In my current position, I review various planning and operating practices at Illinois electric utilities and provide opinions or guidance to the Commission through Staff reports and testimony.

Q. What is your previous work experience?

A. Prior to joining the Commission Staff ("Staff") in 2001, I was an electrical engineer at Pacific Gas and Electric Company in California for approximately 18 years. Prior to that, I was an electrical engineer at Northern Indiana Public Service Company for approximately 3 years. I am a registered professional engineer in the state of California.

Q. What is your educational background?

A. I hold a Bachelor of Science degree in Electrical Engineering from Valparaiso University. While employed in the utility industry and at the Commission, I have attended numerous classes and conferences relevant to electric utility operations.

Q. What is the purpose of your testimony?

A. On June 13, 2012, Commonwealth Edison Company ("ComEd") filed, as ComEd Ex. 10.6, an updated distribution loss study that is titled: "2011 ComEd

Distribution System Loss Factor Study." My testimony describes concerns I have regarding the content and conclusions in ComEd Ex. 10.6. Specifically, ComEd Ex. 10.6 appears to indicate that ComEd used assumptions that are illogical and incorrect when determining its updated distribution loss factors. My testimony recommends that ComEd provide additional explanations addressing these concerns, either prior to or in its rebuttal testimony. ComEd's June 13 filing date left little time for discovery, and my testimony is intended to inform ComEd about the specific aspects of its distribution loss study about which I have concerns.

Q. What is the purpose of ComEd's distribution loss study in this proceeding?

A. My understanding is that ComEd submitted the distribution loss study to quantify and allocate energy lost when supplying electricity to customers using its distribution system. ComEd allocates distribution losses to each customer class based upon the estimated customer class load during various hours of the day and the typical distribution facilities used to supply members of each customer class. Upon study completion, ComEd assigned each customer class a corresponding "distribution loss factor." This factor represents the electric energy that was lost on, or consumed by, ComEd's distribution system during the course of delivering the electricity to customers. I understand ComEd's distribution loss factors for each class to be expressed as a percentage of the electric energy delivered to customers in the class. It is my understanding that ComEd submitted its 2011 ComEd Distribution System Loss Factor Study in this docket in response to the Commission's directive in its May 29, 2012, Final Order in Docket No. 11-0721, at page 173.

Q. What is your concern regarding the study that ComEd submitted?

A. In response to Staff data request ("DR") GER 1.01, ComEd provided a study it used to estimate the weighted average of secondary and service losses for each customer class at peak load. The study is titled: "ComEd Secondary and Service Loss Study," and is dated June 13, 2012.[1] This study includes an explanation of the study's approach, as well as two appendices. The second column in Appendix 1 refers to various methods or models that include the distribution elements that ComEd uses when supplying various customer categories. Appendix 2 provides schematic representations of the methods or models to which Appendix 1 refers. The first table in Appendix 1 includes the customer class "Single Family" and shows that ComEd uses Model #1, Model #2, and Model #20 to supply customers in this class. The row for Model #1 lists 12 customers on the transformer, but lists only 4 customers with services. On page 9, a review of the schematic used for Model 1 shows 12 customers on the transformer, and a separate service for each, or 12 customers with services (rather than the 4 indicated in Appendix 1). The next two rows in the same table in Appendix 1 show 12 single family customers per transformer for Model #2 and 20 customers per transformer for Model #20. But the table in Appendix 1 indicates only 4 customers using service elements for Model #2 and only 10 customers for Model #20. These numbers of customers do not appear to match the number of customers shown in the schematics included Appendix 2, which show that each customer uses a service. In other words, the values ComEd

[1] ComEd Ex. 10.6, p. 4. ComEd's response to Staff DR ENG 1.01 is included as Attachment A.

provides in Appendix 1 for the number of "SF" customers with services appear to be incorrect, so I would like ComEd to further explain its entries in that table.

Q. Do you have any other concerns regarding the 2011 ComEd Distribution System Loss Factor Study, submitted as ComEd Ex. 10.6?

A. Yes. My primary concern relates to ComEd's entries in Appendix C. Appendix C, titled: "2011 Loss Factors – Percent of Category Load Through Elements," shows several percentages that do not make sense to me. For example:

- Appendix C shows that ComEd supplies 85% of category "SF" load with secondary elements and 56% with service elements. It is my understanding and belief that ComEd supplies all, or nearly all, "SF" customers with a service, and uses secondary elements for some smaller percentage of "SF" customers. Therefore, my understanding of how ComEd supplies "SF" customers is different from what ComEd shows on Appendix C. I would expect the percentage for service elements to be at or near 100% and the percentage for secondary elements to be some number lower than the service percentage because I believe that ComEd serves some "SF" customers directly from transformers without the need for secondary. The schematics in Appendix 2 to ComEd's June 13, 2012, ComEd Secondary and Service Loss Study, included as Attachment A, and ComEd's response to DRs[2] appear to corroborate my understanding.
- Appendix C shows that ComEd supplies 87% of category "SF_SH" load with secondary elements and 78% with service elements. As with "SF" customers,

[2] ComEd's response to Staff DR GER 1.04(b), included as Attachment B.

it is my understanding and belief that ComEd supplies all, or nearly all, "SF_SH" customers with a service and uses secondary elements for some smaller percentage of "SF" customers. The schematics in Appendix 2 to ComEd's June 13, 2012, ComEd Secondary and Service Loss Study, included as Attachment A, and ComEd's response to DRs[3] appear to corroborate my understanding.

- Appendix C shows that ComEd supplies 100% of category "0-100 kW" load with both secondary and service elements. Again, this is different from my understanding of how ComEd supplies some "0-100 kW" customers. It is my understanding and belief that ComEd supplies some percentage of customers in the "0-100 kW" category directly from transformers, and so would not use secondary elements in all cases. The schematics in Appendix 2 to ComEd's June 13, 2012, ComEd Secondary and Service Loss Study, included as Attachment A, and ComEd's response to DRs[4] appear to corroborate my understanding.

Q. Has ComEd provided any additional information in response to your DRs regarding Appendix C of ComEd Ex. 10.6?

A. Yes. In response to Staff DR GER 1.04(a), ComEd stated: "The values for Secondary and Service system elements listed in Appendix C represent the weighted energy loss as a percent of load for those elements expressed as a percent of the peak loss of the customer category that has the largest peak loss percentage. Unlike the other system elements in this table, the Secondary and

[3] ComEd's response to Staff DR GER 1.06(b), included as Attachment C.
[4] ComEd's response to Staff DR GER 1.09(b), included as Attachment D.

Service values do not represent the physical usage of the facilities by that customer category."[5]

Q. Did ComEd's explanation satisfy you?

A. No. If the entries that ComEd included in rows 19 and 20 of Appendix C of ComEd Ex. 10.6 do not represent what the table states they represent, then ComEd should not place those values in that table. They do not belong there. I found no note on Appendix C of ComEd Ex. 10.6 to indicate that the values in rows 19 and 20 do not represent the percentage of category load through the secondary and service elements for each customer category, as the title of Table C indicates.

Q. Do you have any additional comments or concerns regarding ComEd's determination of distribution losses attributed to secondary and service elements?

A. Yes. ComEd explains that it used only ten service installations in samples for most customer classes in order to determine its use of secondary and service elements to supply the class.[6] I am concerned that, given the number of customers in each customer class, sampling so few customers in each class may not provide an accurate picture of how ComEd uses secondary and service elements to supply the class, or the distribution losses attributable to those elements.[7]

[5] ComEd's response to Staff DR GER 1.04(a), included as Attachment B.
[6] ComEd's response to Staff DR GER 1.02, included as Attachment E.
[7] ComEd provided the number of customers in each customer class on page 1 of Schedule A-3(a), included as Attachment F.

Q. What is your recommendation regarding ComEd presentation of distribution loss factors in the instant proceeding?

A. ComEd should determine values for the percentage of category load through the secondary and service elements and include those values on Appendix C of ComEd Ex. 10.6. In addition, referring to Appendix 1 in ComEd's June 13, 2012, "ComEd Secondary and Service Loss Study," ComEd should explain why it shows fewer customers in the "# of Customers on Service" column than in the "# of Customer on Transformer" column for "SF" and "SF_SH" customer classes. ComEd should also explain why it believes only ten customers from most customers classes provides an adequate sample for determining its use of secondary and service elements for those classes.

Q. Does this conclude your prepared direct testimony?

A. Yes.

ICC Docket No. 12-0321

**Commonwealth Edison Company's Response to
Illinois Commerce Commission ("STAFF") Data Requests
GER 1.01 – 1.10
Date Received: June 15, 2012
Date Served: June 15, 2012**

REQUEST NO. GER 1.01:

Please provide a copy of the "ComEd Secondary and Service Loss Study" dated June 13, 2012, that ComEd references on page 4 of ComEd Ex. 10.6 (2011 ComEd Distribution System Loss Factor Study) filed June 13, 2012.

RESPONSE:

See the attachment labeled as GER 1.01_Attach 1.

ICC Dkt. No. 12-0321
GER 1.01_Attach 01

ComEd Secondary and Service Loss Study

Commonwealth Edison Company

June 13, 2012

Summary

Distribution system energy loss factors are utilized to determine the amount of energy consumed in the delivery of power to end use customers. These factors are used to formulate the values listed in the ComEd Rate RDS tariff. The purpose of this study is to provide the basis for estimating the peak losses in secondary and service conductors by customer class. The results of this analysis will be used to determine overall distribution energy loss factors by customer class.

Study Approach

Various configurations of secondary and service conductors are used to provide service to ComEd customers. The location of customer and company facilities; magnitude of peak load; and design standards in effect at the time of installation result in differences in the facilities to supply individual customers. For the purpose of this study, conductor types and configurations contained in current ComEd engineering standards were utilized.

A random sample of 10 customers in each of the customer classes was used to determine the frequency of occurrence of overhead, underground or high-rise configuration for the secondary and service conductors. An electrical power flow model for one to three configurations used to provide service to each customer class was developed to determine secondary and service power losses separately. Secondary and service losses in each model were divided by the applicable load on each type of conductor to determine losses as a percent of the load. For customer classes that are supplied by more than one model of secondary and service conductors, the losses for that class were determined by weighting the losses of the applicable models by the frequency of occurrence of the applicable model in the sample of customers by class.

The maximum secondary loss and maximum service loss among all classes is used to determine the general "I2R loss%" value for secondary and service losses in Appendix D of the "2011 ComEd Distribution System Loss Study". The secondary and service loss percentage for each class is divided by the maximum for all classes to determine the "Percent of Class Load Through Elements" listed in Appendix C of the "2011 ComEd Distribution System Loss Study".

Secondary and service losses were not calculated for the Railroad, HV or Primary service classes since only primary conductors are used to provide service to these customers.

Conductor Size, Length and Configuration

For the Single Family Residential classes, the size, type and length was taken from Figure 1 of Engineering Standard Practice (ESP) 5.3.6.2 for suburban overhead installations and from the similar configuration in Figure 1 of ESP 5.3.6.4 for buried conductor installations.

Since there are no standard design documents for multi-family residential and non-residential classes, typical conductor lengths were determined for each class were

determined from the customer class samples. Service conductors were selected for loading using standard conductor sizes in the range of 25 – 50% of the conductor thermal capacity.

A configuration diagram for each of the loss models is contained in Appendix 2. The results of the power flow simulation for each model shows the conductor type, length, service voltage, single or three phase configuration, loading and losses by conductor section as well as the total service and secondary losses and losses in percent of the load in the file Sec_Svc_Losses_6_13_12.xls. For the customer classes of 400 kW and greater, secondary conductor was not identified as being used by the sample customers, so it is not utilized in the power flow models.

Loads

The load used in the power flow model was selected to approximate the peak load by a customer in that class that would be supplied using the conductor model that was used for the class. For the non-residential customer classes, a load in the middle of the class range was generally used. Based on the methods of service identified for the sample customers, three phase service conductors were used for class models at 100kW and higher. Class models above 400kW used conductors operated at 480V

Changes to Secondary and Service Loss Study dated July 26, 2011

- A third Single Family Residential model was added to account for overhead residential installations in urban areas.
- Secondary and service conductor selection was updated by material and length based upon field review and discussion.
- Loss results have been updated based upon studies completed with the updated conductor lengths and materials.

ICC Dkt. No. 12-0321
GER 1.01_Attach 01

Secondary and Service Loss Models

Class	Loss Model	Configuration Diagram
SF	1	Single Family Overhead - Suburban
	2	Single Family URD
	20	Single Family Overhead - Urban
MF	3	Shared Secondary
	4	Service Only
	5	Low Voltage Riser
SF_SH	6	Single Family Overhead
	7	Single Family URD
MF_SH	4	Service Only
	8	Service Only
	9	Service Only
WH	3	Shared Secondary
	4	Service Only
0-100 kW	10	Service Only
	11	Service Only
	18	Shared Secondary
	19	Shared Secondary
100-400 kW	12	Service Only
	13	Service Only
	14	Shared Secondary
400-1000 kW	15	Service Only
1-10 MW	16	Service Only
>10 MW	17	Service Only
Lighting	3	Shared Secondary
	4	Service Only

Results

The study results are listed in the file Sec_Svc_Loss_Results 6_13_12.xls and are utilized in the "2011 Dist Loss factors Ex 10.5.xlsx".

Calculations and Supporting Documents

File	Description
Sec_Service_Losses.mdb	CYME Power Flow simulation base file
Sec_Svc_loss_results 6_13_12.xls	CYME Power Flow raw results
Analyzed Samp Acc for D loss study.xls	Random sample of ComEd accounts used in analysis

Engineering Standard Practice References

5.3.6.2 – Design of Overhead Transformer, Secondary and Service Combinations
5.3.6.4 – Transformer, Buried Secondary ad Service Combination Design
5.3.8.2 – Underground Distribution Cable Selection and Application
5.3.7.1 – Standard Conductor Sizes and Application and Installation Guidelines

Power Flow Simulation Application

Cyme 5.0 revision 15

Prepared by: L. Whittington

Approved by: M. Born

Appendix 1 – Weighted Average results per class

Class Name	Model #	# Customers on Transformer	kW Load/ Customer	Sec Size (# sets)	Sec Length (ft)	Sec Loss %	# of Customers on Service	Svc Size (# sets)	Svc Length (ft)	Svc Loss %	Sec_Svc Voltage (V)	% Weight by Class
SF	1	12	10	1-4/0 AA	140	1.60	4	1-#4 AL	50	1.06	120/240	25%
SF	2	12	10	1-4/0 AL	140	1.57	4	1-2/0 AL	70	0.44	120/240	40%
SF	20	20	5	1-4/0 AA	180	1.52	10	1-#4 AL	40	0.41	120/240	35%

Class Weighted Average Percent (%): Sec – 1.560 Svc – 0.585

Class Name	Model #	# Customers on Transformer	kW Load/ Customer	Sec Size (# sets)	Sec Length (ft)	Sec Loss %	# of Customers on Service	Svc Size (# sets)	Svc Length (ft)	Svc Loss %	Sec_Svc Voltage (V)	% Weight by Class
MF	3	4	3.7	1-4/0 AA	90	2.33	4	1-#4 AL	40	1.31	120/240	30%
MF	4	16	3.7	-	-	-	16	1-350 AL	40	0.61	120/240	60%
MF	5	107	2	2-500 CU 3 ph	75	1.51	107	2-4/C-500 CU	84	0.83	120/208	10%

Class Weighted Average Percent (%): Sec – 0.850 Svc – 0.842

Class Name	Model #	# Customers on Transformer	kW Load/ Customer	Sec Size (# sets)	Sec Length (ft)	Sec Loss %	# of Customers on Service	Svc Size (# sets)	Svc Length (ft)	Svc Loss %	Sec_Svc Voltage (V)	% Weight by Class
SF_SH	6	12	10	1-4/0 AA	140	1.60	4	1-#4 AL	50	1.06	120/240	60%
SF_SH	7	12	10	1-4/0 AL	140	1.57	4	1-2/0 AL	70	0.44	120/240	40%

Class Weighted Average Percent (%): Sec – 1.588 Svc – 0.812

Appendix 1 – Weighted Average results per class (Continued)

Class Name	Model #	# Customers on Transformer	kW Load/ Customer	Sec Size (# sets)	Sec Length (ft)	Sec Loss %	# of Customers on Service	Svc Size (# sets)	Svc Length (ft)	Svc Loss %	Sec_Svc Voltage (V)	% Weight by Class
MF_SH	4	16	3.7	-	-	-	16	1-#4AA	50	0.77	120/240	80%
MF_SH	8	3	3.7	-	-	-	3	1-#2AL	60	1.04	120/240	10%
MF_SH	9	6	3.7	-	-	-	6	1-#2AL	40	0.17	120/208	10%

Class Weighted Average Percent (%): Sec – 0 Svc – 0.738

Class Name	Model #	# Customers on Transformer	kW Load/ Customer	Sec Size (# sets)	Sec Length (ft)	Sec Loss %	# of Customers on Service	Svc Size (# sets)	Svc Length (ft)	Svc Loss %	Sec_Svc Voltage (V)	% Weight by Class
WH	3	4	3.7	2-4/0 AA	90	2.33	4	1-#4 AL	40	1.31	120/240	50%
WH	4	16	3.7	-	-	-	16	1-350 AL	40	0.61	120/240	50%

Class Weighted Average Percent (%): Sec – 1.166 Svc – 0.961

Class Name	Model #	# Customers on Transformer	kW Load/ Customer	Sec Size (# sets)	Sec Length (ft)	Sec Loss %	# of Customers on Service	Svc Size (# sets)	Svc Length (ft)	Svc Loss %	Sec_Svc Voltage (V)	% Weight by Class
0-100 kW	10	1	25	-	-	-	1	1-1/0 AL	65	0.35	120/240	17%
0-100 kW	11	1	25	-	-	-	1	1-1/0 CU	65	0.88	120/240	11%
0-100 kW	18	23	25	3-1/0 AL	83	3.03	1	1-1/0 AL	65	1.45	120/240	44%
0-100 kW	19	9	25	4-1/0 CU	83	1.77	1	1-1/0 CU	65	0.90	120/240	28%

Class Weighted Average Percent (%): Sec – 1.830 Svc – 1.045

Appendix 1 – (Weighted Average results per class) Continued

Class Name	Model #	# Customers on Transformer	kW Load/ Customer	Sec Size (# sets)	Sec Length (ft)	Sec Loss %	# of Customers on Service	Svc Size (# sets)	Svc Length (ft)	Svc Loss %	Sec_Svc Voltage (V)	% Weight by Class
Lighting	3	4	3.7	1-4/0 AL	90	0.55	1	1-#6 AL	40	0.51	120/240	40%
Lighting	4	16	3.7	-	-	-	1	1-#6 AL	40	0.51	120/240	60%

Class Weighted Average Percent (%): Sec – 0.222 Svc – 0.514

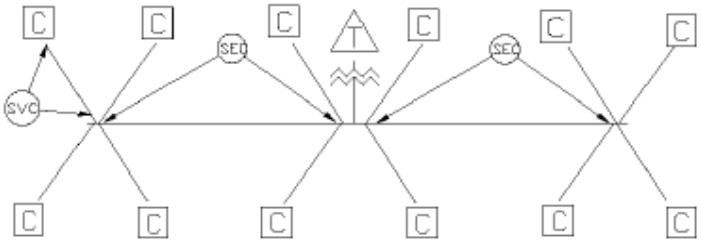
Class Name	Model #	# Customers on Transformer	kW Load/ Customer	Sec Size (# 3 Ø sets)	Sec Length (ft)	Sec Loss %	# of Customers on Service	Svc Size (# 3 Ø sets)	Svc Length (ft)	Svc Loss %	Sec_Svc Voltage (V)	% Weight by Class
100-400 kW	12	1	154	-	-	-	1	2-4/0 AA	45	0.73	120/240	34%
100-400 kW	13	1	154	-	-	-	1	1-500 CU	45	0.43	120/208	44%
100-400 kW	14	1	154	2-4/0 AA	45	1.02	1	2-4/0 AA	45	0.74	120/240	22%

Class Weighted Average Percent (%): Sec – 0.225 Svc – 0.598

Class Name	Model #	# Customers on Transformer	kW Load/ Customer	Sec Size (# 3 Ø sets)	Sec Length (ft)	Sec Loss %	# of Customers on Service	Svc Size (# 3 Ø sets)	Svc Length (ft)	Svc Loss %	Sec_Svc Voltage (V)	% Weight by Class
400-1000 kW	15	1	465	-	-	-	1	2-500CU	25	0.09	277/480	100
1-10 MW	16	1	5,500	-	-	-	1	15-500CU	20	0.12	277/480	100
>10 MW	17	1	11,682	-	-	-	1	31-500CU	30	0.18	277/480	100

Appendix 2 – Configuration Diagrams

Single Family Overhead - Suburban

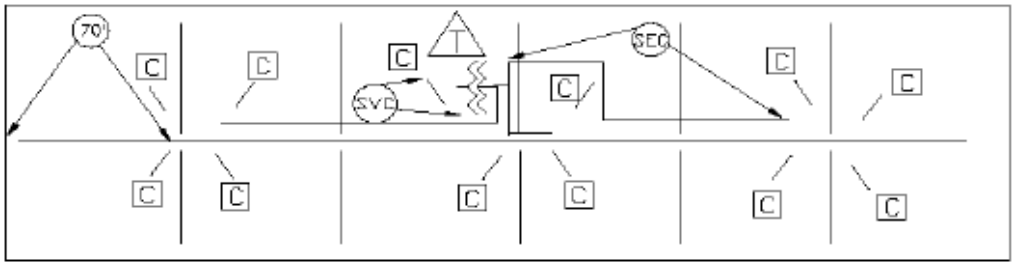


Legend
T – Transformer
C – Customer
SEC – Secondary
SVC - Service

Used in Models 1 and 6

Appendix 2 – Configuration Diagrams (continued)

Single Family URD

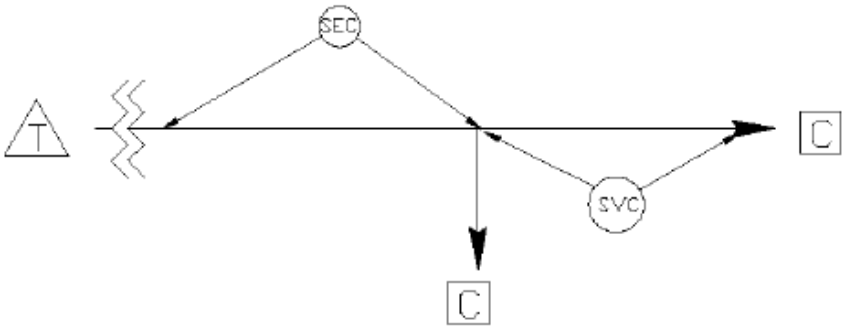


Legend
T – Transformer
C – Customer
SEC – Secondary
SVC - Service

Used in Models 2 and 7

Appendix 2 – Configuration Diagrams (continued)

Shared Secondary



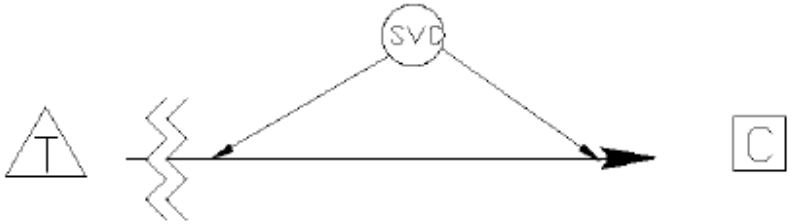
Legend
T – Transformer
C – Customer
SEC – Secondary
SVC - Service

Used in Models 3, 14, 18, and 19

ICC Dkt. No. 12-0321
GER 1.01_Attach 01

Appendix 2 – Configuration Diagrams (continued)

Service Only



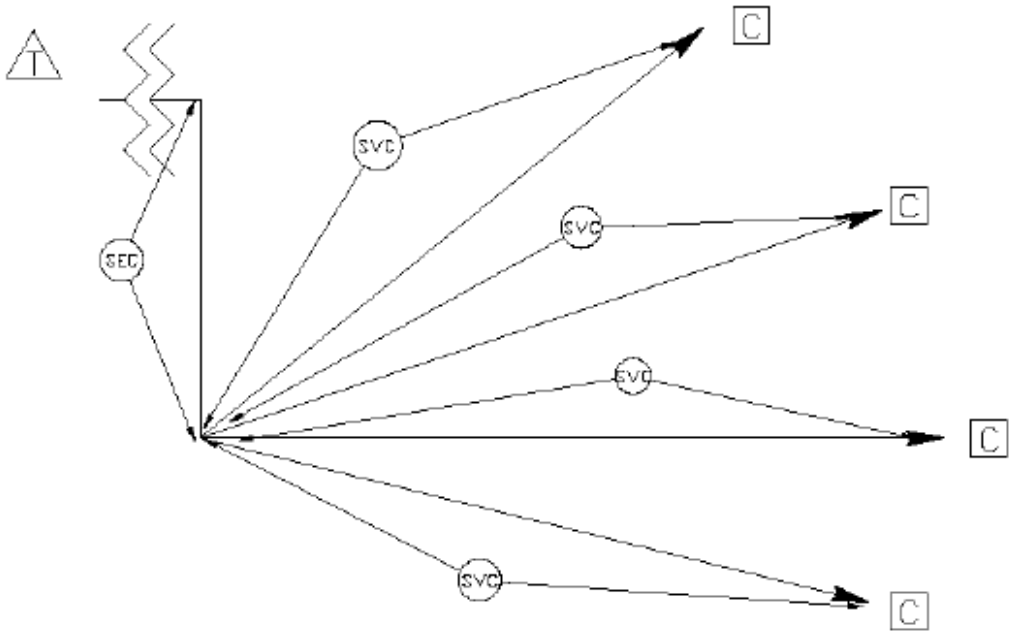
Legend
T – Transformer
C – Customer
SVC - Service

Used in Models 4, 8 -13 and 15-17

CFRC 0021486

Appendix 2 – Configuration Diagrams (continued)

Low Voltage Riser

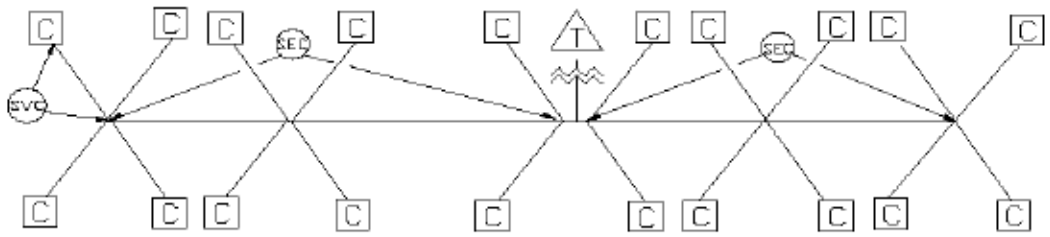


Legend
T – Transformer
C – Customer
SEC – Secondary
SVC - Service

Used in Model 5

Appendix 2 – Configuration Diagrams (continued)

Single Family Overhead - Urban



Legend
T – Transformer
C – Customer
SEC – Secondary
SVC - Service

Used in Model 20

ICC Docket No. 12-0321

Commonwealth Edison Company's Response to
Illinois Commerce Commission ("STAFF") Data Requests
GER 1.01 – 1.10
Date Received: June 15, 2012
Date Served: June 26, 2012

REQUEST NO. GER 1.04:

Appendix C of ComEd Ex. 10.6 appears to indicate that ComEd uses secondary facilities to supply 85% of category SF (Single Family) customer load, and service facilities to supply only 56%.

a. Please explain how ComEd determined that it supplies more category SF customer load with secondary than it supplies with services, and provide the data that ComEd used to reach this conclusion.

b. Please explain how ComEd physically supplies the remaining 44% of category SF customer load not supplied with a service.

RESPONSE:

a. The values for the Secondary and Service system elements listed in Appendix C of ComEd Ex. 10.6 represent the weighted energy loss as a percent of load for those elements expressed as a percent of the peak loss of the customer category that has the largest peak loss percentage. Unlike the other system elements in this table, the Secondary and Service values do not represent the physical usage of the facilities by that customer category. The derivation of these values is explained in the Secondary and Service section of ComEd Ex. 10.6. The data used by ComEd to determine these values is shown in the *ComEd Secondary and Service Loss Study,* dated June 13, 2012 (see ComEd's Response to Staff Data Request GER 1.01 and its attachment labeled as GER 1.01_Attach 01). This report describes the sampling process, load, system models, and conductor information used to calculate these losses.

b. All customers in the SF category are supplied by service conductors. As shown in Appendix 1 of the *ComEd Secondary and Service Loss Study* dated June 13, 2012, all three (3) of the loss models for the SF category utilize service conductors.

ICC Docket No. 12-0321

Commonwealth Edison Company's Response to
Illinois Commerce Commission ("STAFF") Data Requests
GER 1.01 – 1.10
Date Received: June 15, 2012
Date Served: June 26, 2012

REQUEST NO. GER 1.06:

Appendix C of ComEd Ex. 10.6 appears to indicate that ComEd uses its secondary facilities to supply 87% of category SF-SH (Single Family with Electric Space Heat) customer load, and service facilities to supply 78%.

a. Please explain how ComEd determined these percentages, including the data that ComEd used to determine them.

b. Please explain how ComEd physically supplies the remaining 22% of category SF-SH customer load that it does not supply with a service.

RESPONSE:

a. See subpart (a) of ComEd's Response to Staff Data Request GER 1.04.

b. All customers in the SF-SH category are supplied by service conductors. As shown in Appendix 1 of the *ComEd Secondary and Service Loss Study* dated June 13, 2012 (see ComEd's Response to Staff Data Request GER 1.01 and its attachment labeled as GER 1.01_Attach 01), both of the loss models for the SF category utilize both secondary and service conductors.

ICC Docket No. 12-0321

Commonwealth Edison Company's Response to
Illinois Commerce Commission ("STAFF") Data Requests
GER 1.01 – 1.10
Date Received: June 15, 2012
Date Served: June 26, 2012

REQUEST NO. GER 1.09:

Appendix C of ComEd Ex. 10.6 appears to indicate that ComEd uses secondary facilities to supply 100% of category 0-100 kW (Small) customer load, and service facilities to supply 100%.

a. Please explain how ComEd determined these percentages, including the data that ComEd used to determine them.

b. Please confirm that ComEd intends to indicate that it supplies all of category 0-100 kW load using secondary facilities?

RESPONSE:

a. See subpart (a) of ComEd's Response to Staff Data Request GER 1.04.

b. All customers in the 0-100 kW category are supplied by service conductors. As shown in Appendix 1 of the *ComEd Secondary and Service Loss Study* dated June 13, 2012 (see ComEd's Response to Staff Data Request GER 1.01 and its attachment labeled as GER 1.01_Attach 01), all four (4) of the loss models for the 0-100 kW category utilize service conductors.

ICC Docket No. 12-0321

Commonwealth Edison Company's Response to
Illinois Commerce Commission ("STAFF") Data Requests
GER 1.01 – 1.10
Date Received: June 15, 2012
Date Served: June 26, 2012

REQUEST NO. GER 1.02:

How many service installations for each customer category did ComEd sample in order to determine the percentages shown in rows 19 and 20 labeled "Secondary" and "Service" respectively in Appendix C of ComEd Ex. 10.6?

RESPONSE:

Ten (10) service installations were sampled for each customer category with the exceptions of the 0-100kW category where twenty (20) service installations were sampled and in the lighting classes where zero (0) service installations were sampled.

Commonwealth Edison Company
Section 285.1015
Schedule A-3 (a)(1): Comparison of Present and Updated Rates
Average Number of Customers

Delivery Classes	Average Number of Customers in 2011
Residential	
Single Family Without Electric Space Heat	2,231,130
Multi Family Without Electric Space Heat	1,033,360
Single Family With Electric Space Heat	34,969
Multi Family With Electric Space Heat	157,486
Total Residential	***3,456,945***
Nonresidential	
Watt-Hour	94,833
Small Load (≤ 100 kW)	245,039
Medium Load (Over 100 kW ≤ 400 kW)	17,364
Large Load (Over 400 kW ≤ 1,000 kW)	4,207
Very Large Load (Over 1,000 kW ≤ 10,000 kW)	1,882
Extra Large Load (Over 10,000 kW)	51
High Voltage	74
Railroad	2
Total Nonresidential	***363,452***
Lighting	
Fixture-Included Lighting	1,394
Dusk to Dawn Lighting	3,594
General Lighting	913
Total Lighting	***5,901***
Total Company	***3,826,298***